REMARKS

This application contains claims 1-33. Claim 9, 20 and 31 have been canceled without prejudice. Claims 1, 4, 6-8, 10, 12, 15, 17-19, 23, 26, 28-30, 32 and 33 are hereby amended. No new matter has been added. Reconsideration is respectfully requested.

Applicant thanks Examiners Guill and Rodriguez for the courtesy of a personal interview with Applicant's representative, Sanford T. Colb (Reg. No. 26,856), held in the USPTO on December 14, 2005. At the interview, Mr. Colb proposed to amend claim 1 in order to incorporate the limitations of claim 9. It was agreed that such an amendment, along with additional clarifying language (set forth in the Examiner's interview summary) would distinguish the present invention over the cited art. Applicant has amended independent claims 1, 12 and 23 accordingly.

Claims 4, 6, 10, 15, 17, 21, 26, 28 and 32 were objected to for informalities. Applicant has amended these claims as suggested by the Examiner in order to overcome these objections.

Claims 7, 18, 29 and 33 were rejected under 35 U.S.C. 112, second paragraph, due to typographical errors. Applicant has amended these claims to correct the errors as

suggested by the Examiner. Thus, all the claims are now believed to comply with the requirements of 35 U.S.C. 112.

Claims 1-32 were rejected under 35 U.S.C. 103(a) over Beer et al. ("On-the-fly Model Checking of RCTL Formulas") in view of Beer et al. ("RuleBase: An Industry-Oriented Formal Verification Tool") and further in view of Torrieri ("Algorithms for Finding an Optimal Set of Short Disjoint Paths in a Communication Network"). Applicant has amended independent claims 1, 12 and 23, as agreed in the interview, in order to clarify the distinction of the claimed invention over the cited art. The amended independent claims include the added limitations of claims 9, 20, and 31, now canceled. Dependent claims 8, 10, 19, 21, 30 and 32 have been amended for proper dependence in view of the amendment to the independent claims.

Claim 1, as amended, recites a method for checking a model of a system under study. A plurality of mutually-disjoint traces are computed from at least one target state to at least one initial state of the system, via successive reachable sets of states. In each trace that is computed subsequently to the initial trace, the states are selected so as to maximize the distance of the trace from at least the initial trace. This approach is advantageous, *inter alia*, in

providing the user with insight into the design of the system in question (see specification, page 5, lines 10-13).

The two cited publications by Beer describe techniques for solving temporal logic formulas, including on-the-fly techniques. When a property of a formula is found to be false on some state of a model to which the formula is applied, a sequence of states and transitions (a path) that leads to the problematic state of the design is constructed. As noted by the Examiner, neither of the publications by Beer discloses or suggests that multiple disjoint paths of this sort should be constructed.

Torrieri describes algorithms for finding multiple disjoint paths through a graph. In rejecting claim 9, the Examiner stated that Torrieri appears to teach selecting the states on each trace so as to maximize a distance of the trace from other traces. In support of this contention, the Examiner cited page 1699, section III, first paragraph. In fact, Torrieri is concerned with minimizing the lengths and maximizing the number of disjoint paths that are found in a network (section II - Definition of Optimal Set). He is indifferent to the distance between the paths. Section III in Torrieri, which the Examiner cited in this context, simply describes an efficient algorithm for approximating such an optimal set of short disjoint paths. Torrieri does not

disclose any method for maximizing the distance between the disjoint paths, nor does he suggest that maximizing the distance might be desirable for any reason.

Thus, claim 1, as amended, is believed to be patentable over the cited art. In view of the patentability of claim 1, dependent claims 2-8, 10 and 11 are also believed to be patentable.

Independent claims 12 and 23 recite apparatus and a computer software product, which operate on principles similar to the method of claim 1. These independent apparatus and software claims have been amended in like manner to claim 1 and are believed to be patentable, as well, for the reasons explained above. In view of the patentability of claims 12 and 23, dependent claims 13-19, 21, 22, 24-29, 31 and 32 are also believed to be patentable.

Furthermore, the dependent claims in this application are believed to recite subject matter that is independently patentable, notwithstanding the patentability of the independent claims. In the interest of brevity, however, Applicant will not argue the specific patentability of the dependent claims at this point.
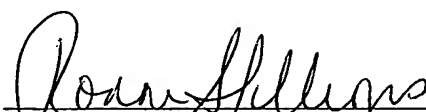
Applicant believes the amendments and remarks presented hereinabove to be fully responsive to all of the objections and grounds of rejection raised by the Examiner.

In view of these amendments and remarks, Applicant

respectfully submits that all of the claims in the present

application are in order for allowance. Notice to this effect

is hereby requested.

Respectfully submitted,

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